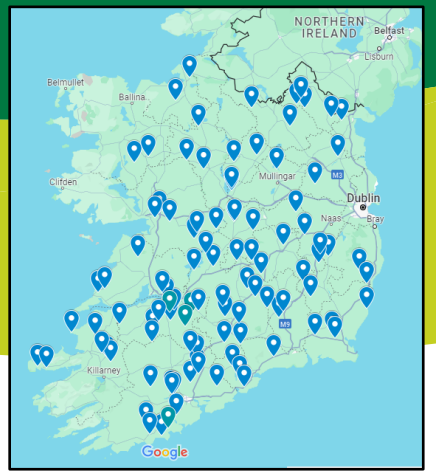
Water Quality Conference 2026

Pat Tuohy

Upgrading farm infrastructure to minimise nutrient loss to water

Slurry and Soiled Water Volumes

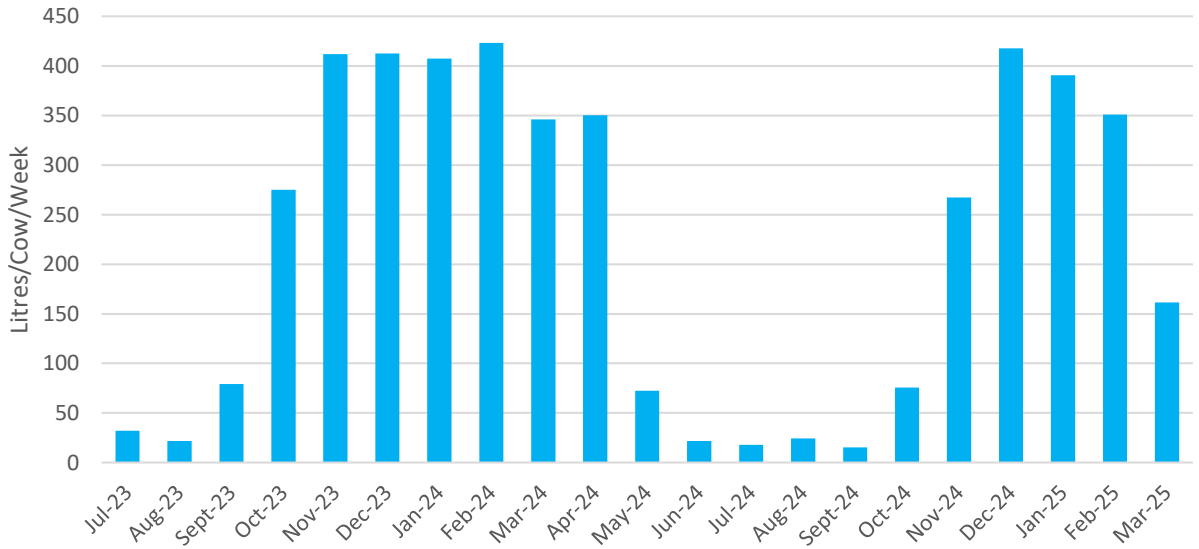


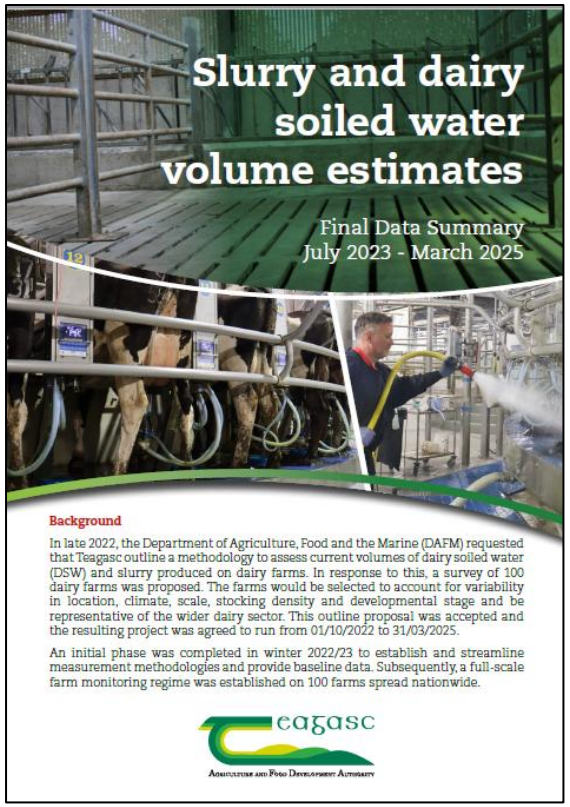
❑ Survey of 100 farms, Nationwide, July 2023 to March 2025

- Slurry tanks collected an average of **0.40 m³/cow/week** at peak
- Soiled water tanks collected an average of **0.30 m³/cow/week** at peak



Slurry Volumes across 100 farms





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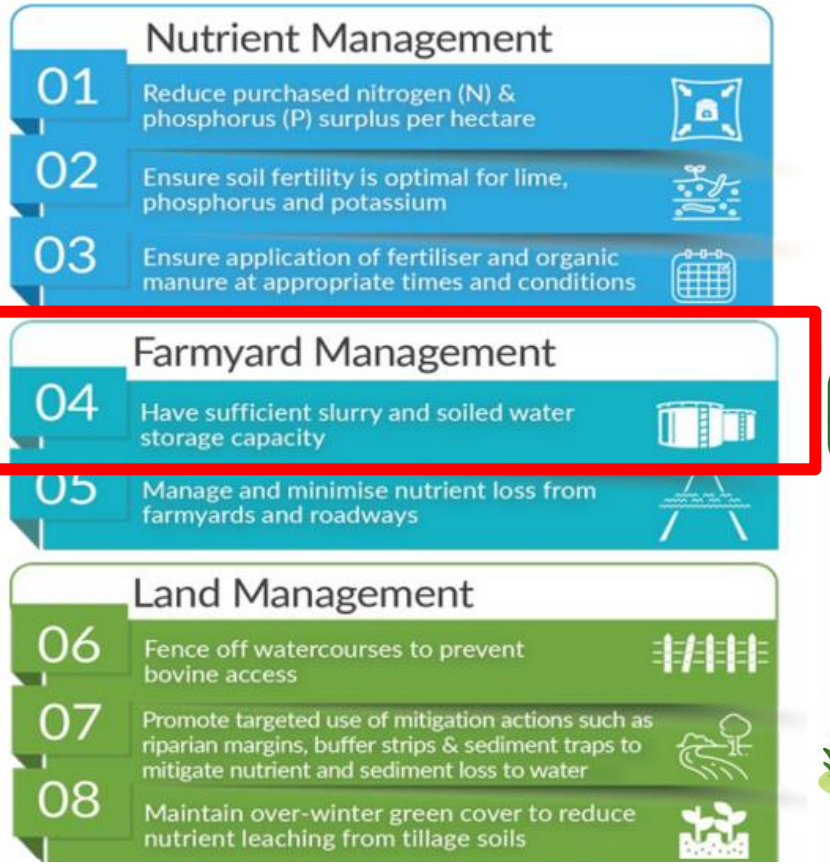
Better Farming for Water
8-Actions for Change

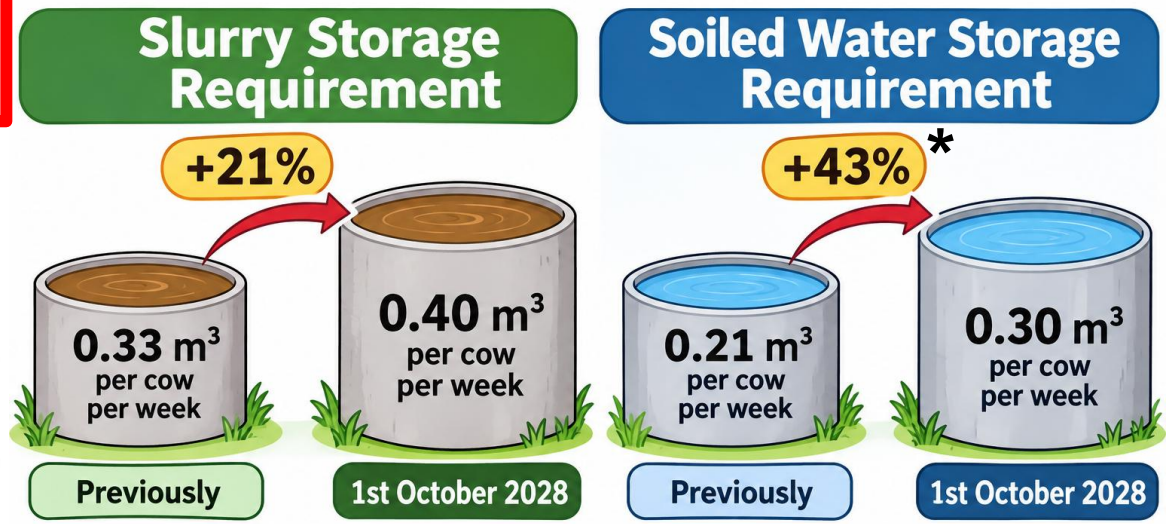
Slurry and Soiled Water Volumes

8-Actions for Change



- The project provided the first reliable dataset regarding slurry and dairy soiled water volumes produced
- **This directly informed revisions to the 6th Nitrates Action Programme**
  - Guiding updates on storage requirements

New storage requirements



**Changes to how soiled water requirements are calculated dampens this % increase*

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Farm surveys

To assess future infrastructure requirements (+20% volume scenario)

- 12 farms: 70 - 590 cows
  - Variability in location, scale, facilities etc.
- Farmyard Infrastructure surveys
- Assessing current capacity and contributions



Objectives

Apply increased storage requirement and assess:

- The options available to meet compliance
- How compliance could best be achieved
- The on-farm costs

Case study 1

- 100 cows
- Total Storage requirements: 1495 m^3 (≈330,000 gallons)
- Slurry: 1217 m^3, Soiled water: 112 m^3, FYM: 146 m^3, Rainfall: 20 m^3





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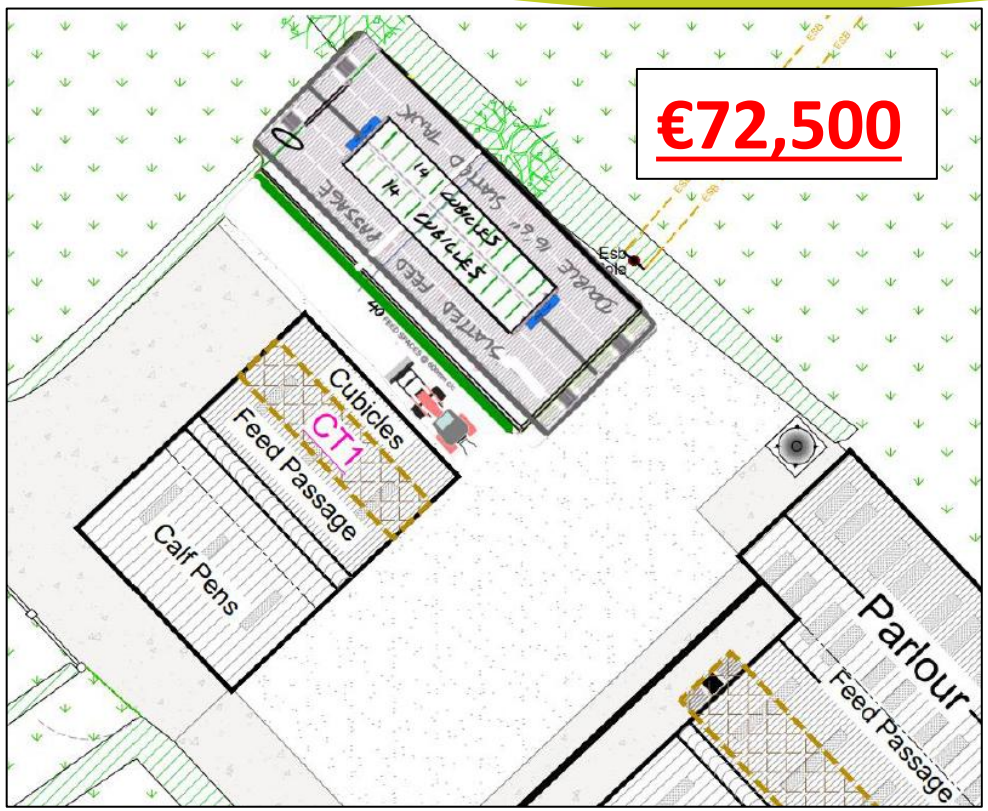
Case study 1- New storage

- 100 cows
- Total Storage requirements: 1495 m^3 (≈330,000 gallons)



New soiled water tank-additional capacity of 84 m^3



New slatted slurry tank-additional capacity of 621 m^3

€874/cow

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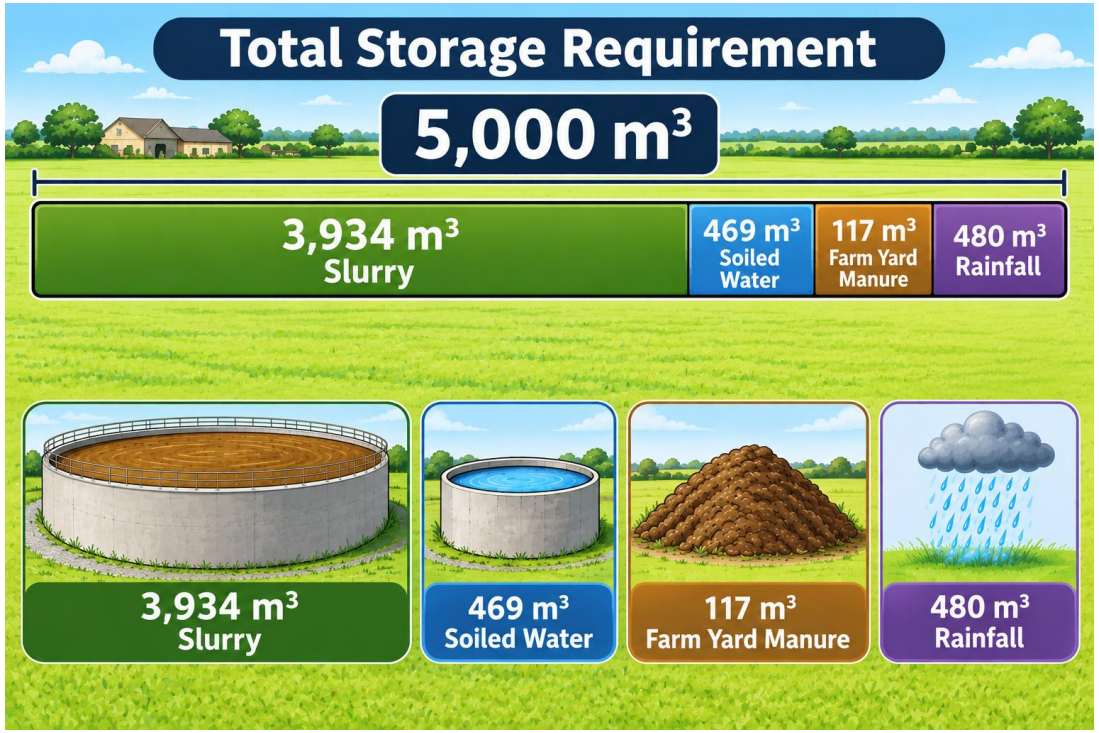
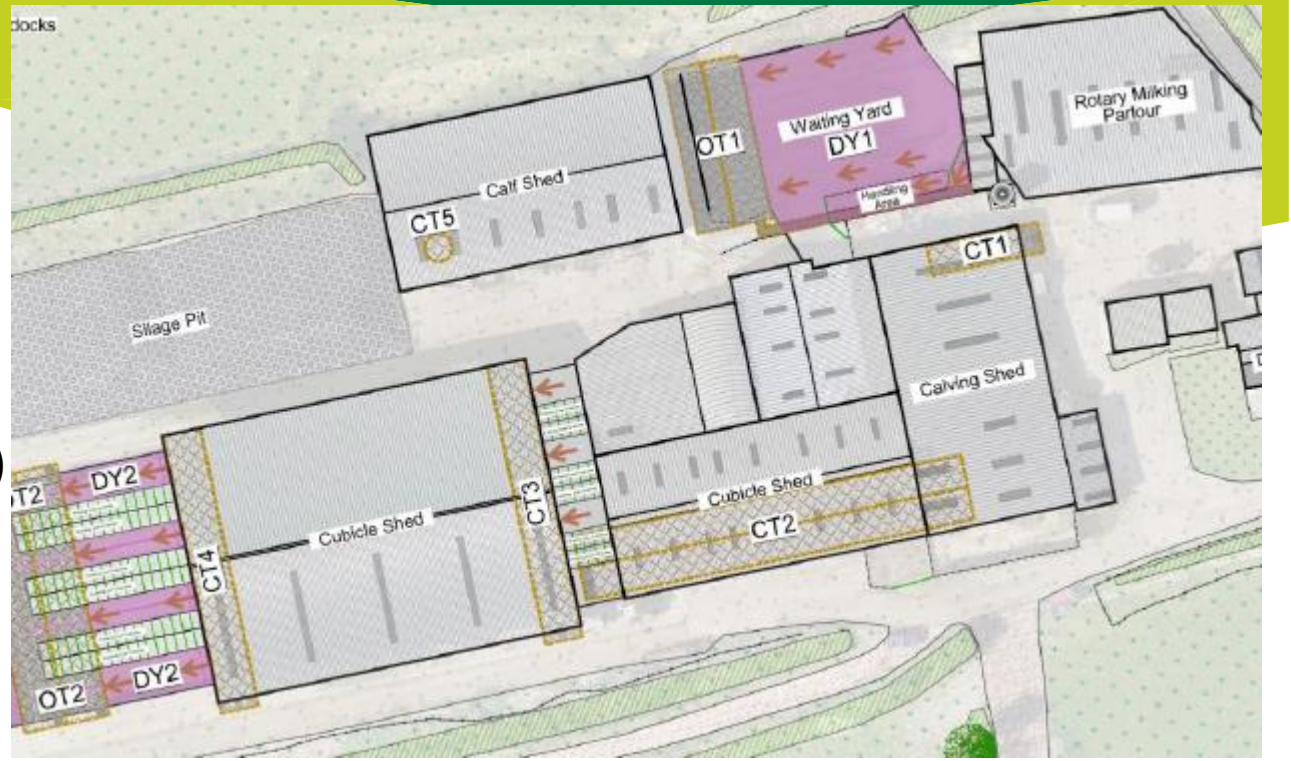
Case study 2

- 420 cows
- Total Storage requirements: 5000 m^3 (≈1,100,000 gallons)
- Slurry: 3934 m^3, Soiled water: 469 m^3, FYM: 117 m^3, Rainfall: 480 m^3





Case study 2-Reducing rainfall input

- 420 cows
- Total Storage requirements: 5000 m^3 (≈1,100,000 gallons)



New roof over collecting yard-Diverts 110 m^3 of rainfall



New roof over cubicles-Diverts 370 m^3 of rainfall

€367/cow

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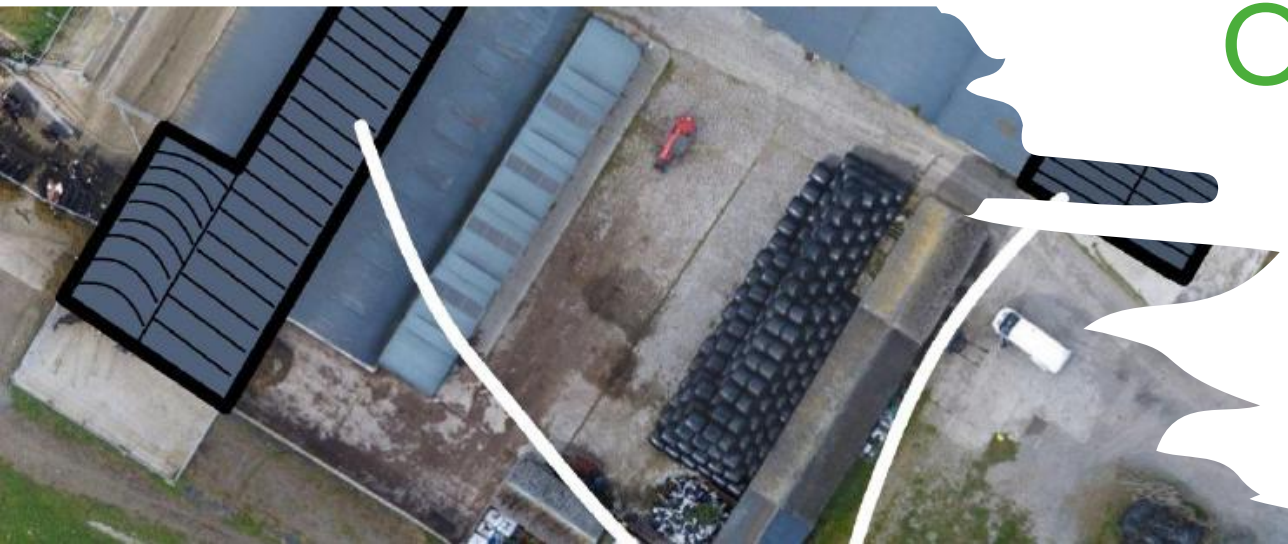
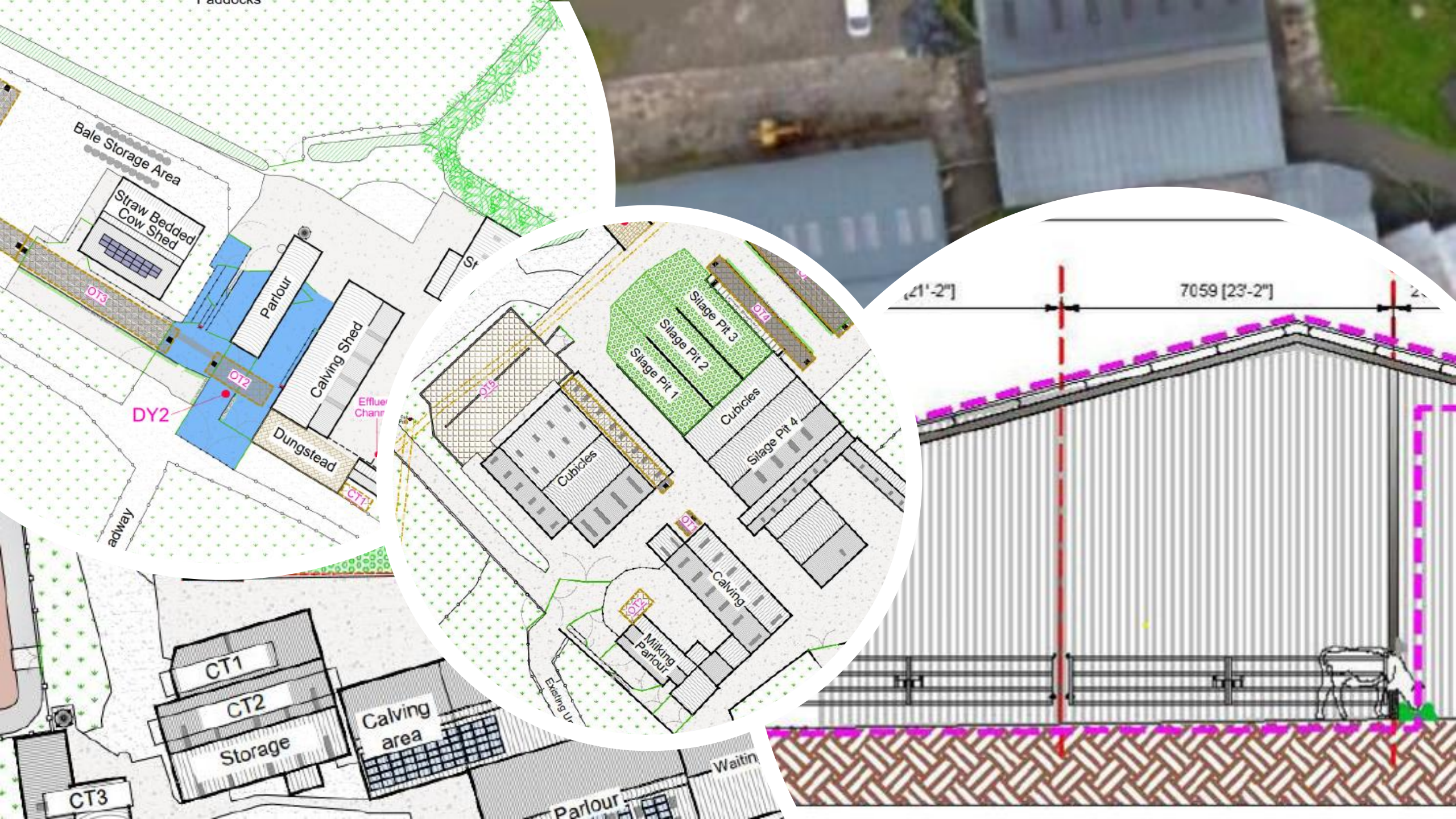


Options

- **39** options proposed on 12 farms
  - Rainwater diversion/ roofing
  - Separation of dairy soiled water and slurry
  - Additional storage


Paddocks
Bale Storage Area
Straw Bedded Cow Shed
Parlour
Calving Shed
OT3
OT2
DY2
Dungstead
CT1
adway
Silage Pit 3
Silage Pit 2
Silage Pit 1
OT4
OT5
Cubicles
Cubicles
Silage Pit 4
OT1
Calving
OT6
Milking Parlour
7059 [23'-2"]
CT1
CT2
Storage
Calving area
CT3
Parlour

Average costs

Cost of upgrading farmyard infrastructure

Farm	No. of Cows	Total (€)	Total/Cow (€)
1	70	6700	96
2	70	33700	481
3	96	43300	451
4	100	87350	874
5	107	90750	848
6	117	51650	441
7	136	84300	620
8	203	182150	897
9	330	40895	124
10	350	53370	152
11	420	154080	367
12	590	78500	133
Average	**216**	**75562**	**457**

- €457/cow for all upgrades
- €152/m^3 of new storage
- €345/m^3 of rainfall diverted from storage
- % rainfall to total storage required ranged from 2 - 32%.

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Benefits of additional storage









Best Practice Guidelines

Ideal conditions

- When potential for nutrient loss is low
- Uptake by the growing crop is high
- Suitable ground conditions/Trafficable soils

Slurry/Soiled Water shall not be applied to land in any of these circumstances

- (a) the land is waterlogged;
- (b) the land is flooded or likely to flood;
- (c) the land is snow-covered or frozen;
- (d) heavy rain is forecast within 48 hours

	€ Value of slurry	
	Ideal conditions & location	Poor conditions & location
1,000 gallons	€34	€14
100 cows/18 weeks	€5,385	€2,220



- **Are we getting best value or wasting resources?**
- **Are storage issues dictating management?**
- *Adequate storage allows flexibility in slurry application timings and rates*
- This enables optimum use of nutrients and yields a financial return



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Actions

New infrastructure

- Speak to your advisor now about a storage capacity check
- Establish your requirements
- Design, planning and finance
- Assess supports:
  - Tax Relief: Expenditure on slurry storage can be written off over two years
  - TAMS

Management

- Prevent clean water entering tanks
- Separate slurry and soiled water
- Empty tanks before closing
- Build-in resilience









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Thank you

With thanks to all participating farmers who provided access and data to facilitate this project