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Construction studies Leaving Certificate 2014



Traditional cottage

Exam Number: 110602

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Acknowledgements

I would like to thank everybody who helped in the designing and making of my project. I am thankful for all the help and advice given to me throughout the year. I am also thankful of the Office of public works who promptly responded to my letter, There assistance was much appreciated when designing my project especially the base I designed as it was inspired from the information they forwarded on to me.

Project outline

Plan of procedure

- 1. I intend to make a model of a historic vernacular cottage and its surroundings.
- 2. I am interested in this project as I enjoy viewing historic buildings and decided I would like to make a model of one in my local area. I have been interested in these buildings from a very young age and I have visited the Ulster American folk park on many occasions.
- 3. I am interested in how these buildings where constructed as very few plans where made prior to construction and only basic tools where used.

My aims

- 1. I intend to make my model to a scale of 1:10 of the original building.
- 2. I want to make the model of the cottage as realistic as possible
- 3. I intend to recreate the surroundings of the cottage in my model
- 4. I want to develop an understanding of how a historic building was constructed, I intend to investigate the design of the cottage and how the building functioned as a home.

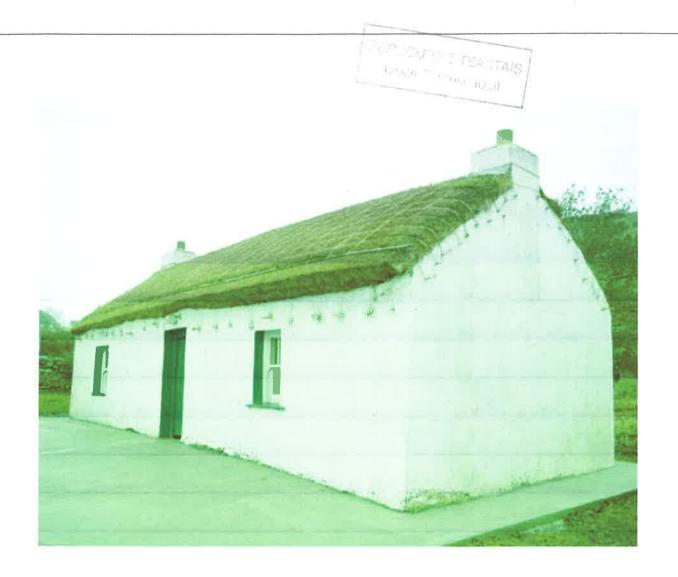


Internet Research

There is a wealth of thatched houses surviving in the west of County Donegal with many more altered or formerly thatched examples. Modest in scale and architectural ambition, they exhibit the simple and functional form of vernacular buildings in Ireland. Vernacular buildings are generally constructed using local materials: rubble stone or fieldstone is used in the houses of this type in west Donegal. The walls are often coated with a lime rendered and whitewash finish although, traditionally, many houses were left with the stone work exposed. In more recent times the houses have been cement rendered. Local roofing materials were also used.

Vernacular houses were generally built by the first family to inhabit a particular plot, sometimes with the help of neighbours, and with no architect or specialist designer involved in their initial construction. They respect the local landscape and are usually positioned to avail of any natural shelter from the elements, sometimes at an angle or with their backs to the approach road or laneway.

Thatched houses in the area are single-storey in height, one room deep between the front and rear walls, and seldom with openings in the gable ends except for the occasional small light at attic level. Their plan and style remained consistent over many centuries: such houses are consequently difficult to date with accuracy. The majority of the surviving houses probably date to the nineteenth century although some may date back to the 1700s. Thatched houses continued to be built in this part of Donegal into the twentieth century with a number of surviving examples not depicted on the third edition of the Ordnance Survey six-inch maps: their construction would therefore date to the early 1900s.



Internet research

VERNACULAR DWELLING TYPES IN IRELAND



One roomed cabin of the landless Argicultural labourer. Direct entry bouse where the door is at the opposite end of the kitchen from the hearth.



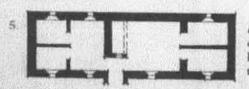
House with door at opposite end of kitchen from hearth, which is centrally placed.



A small projection at one corner of the kirchen to one side of the hearth called a "Bed Outshen" cuil teach or cailleach.



Bed Outshot in kitchen which is centrally placed with cooms at both ends. Front and back doors opposite one another.



Lobby Entry House, having the door and usually the only door placed in line with the main cooking hearth in the kitchen. A jamb wall was set parallel to the front of the house thus creating a lobby.



Combined Byre-Dwelling House, combined under a single roof, spaces for human beings and for cardle without a dividing wall, the same door or opposite doors being used by both.

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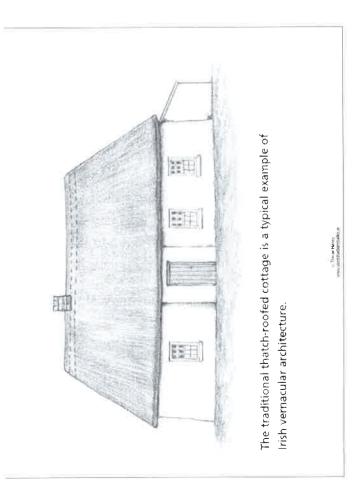


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Architectural Technology: vernacular architecture

western cottage: design features



Features to remember about vernacular architecture

- The buildings adapt harmoniously to the natural environment
- The construction process is intuitive, without blueprints, and open to later modifications
- Patterns and styles are subject to a slow evolution of traditional styles suited to the region

Western Cottage



Vernacular Architecture in the Irish context

- grouped under the headings eastern and western
- * reflect two distinctive designs
- evolved as a result of a variety of factors:

 differences in weather conditions
- economic constraints
- availability of materials
 local bulldings techniques



General features of vernacular cottages

- built using locally available, natural building materials (e.g. stone, mud, wood, straw, rushes) so they fit into their surroundings well
- · built in sheltered positions so they blend well with the landscape
- the simple proportion and scale of these buildings coupled with the use of bright colours, especially red, around windows and doors is pleasing to the
- scale and size is very modest (human scale)
- sense of respect for the landscape conveyed through their simplicity of design and humbleness of execution

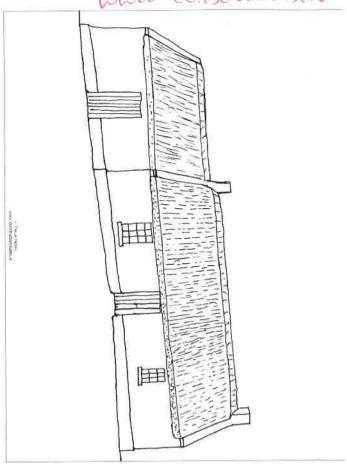
Eastern Cottage



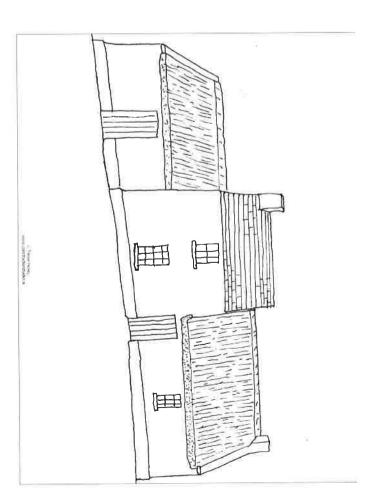
Blending in with the landscape

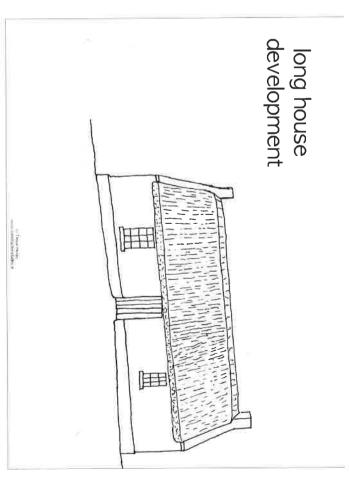


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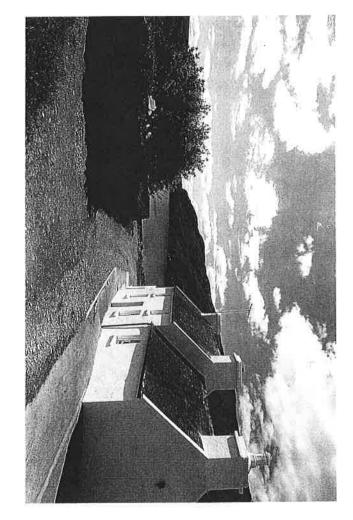




Irish colleges by weller THE TRADITIONAL IRISH HOUSE Piciffer onc Moude Shoffice

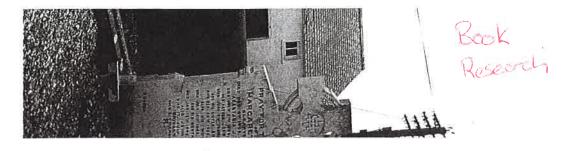
NEAR MYROSS, Co. Cork

This house, on one of the many pretty inlets on the Cork coastline, is of delightfully simple expression and composition, partly two-storey and partly single-storey, with steeply pitched slate roofs and gables rising above roof level. The Cork coast, with its gentle climate warmed by the Gulf Stream, has always been a popular place for building. Many small towns and villages have developed around its attractive harbours.



Dwyer MacAllister Cottage GLEN OF IMAAL, Co. Wicklow

Dwyer MacAllister Cottage has been preserved because of its associations with Michael Dwyer, a famous rebel who was trapped here by the English in 1799. Another member of his group, Samuel MacAllister, saved Dwyer's life by acting as a decoy, sacrificing his life so that Dwyer could escape. Furnished in a traditional manner, the cottage is an interesting example of the Vernacular style. It is in the care of the Office of Public. Works and is open to the public.



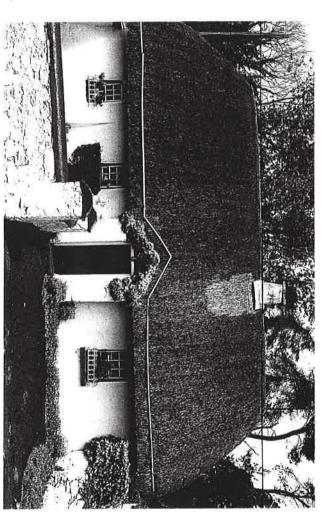
CLEARISTOWN, Co. Wexford

Irish cotterses

VERNACULAR COTTAGES IN THE SOUTH AND EAST

Preiffer and Moora Shattrey

early two-storey house, now the centuries_Fortunately a few post office, is an example of what is family for over a century. old and that it has been in their house say it is three hundred years survive. The present owners of this the eighteenth and nineteenth fashionable classical box houses of many were replaced by the more homes of comfortable farmers, and eighteenth centuries, were the from the late seventeenth and early mansion'. Such houses, dating often referred to as a thatched Viewed across the cemetery, this



BALLAGHKEEN, Co. Wexford

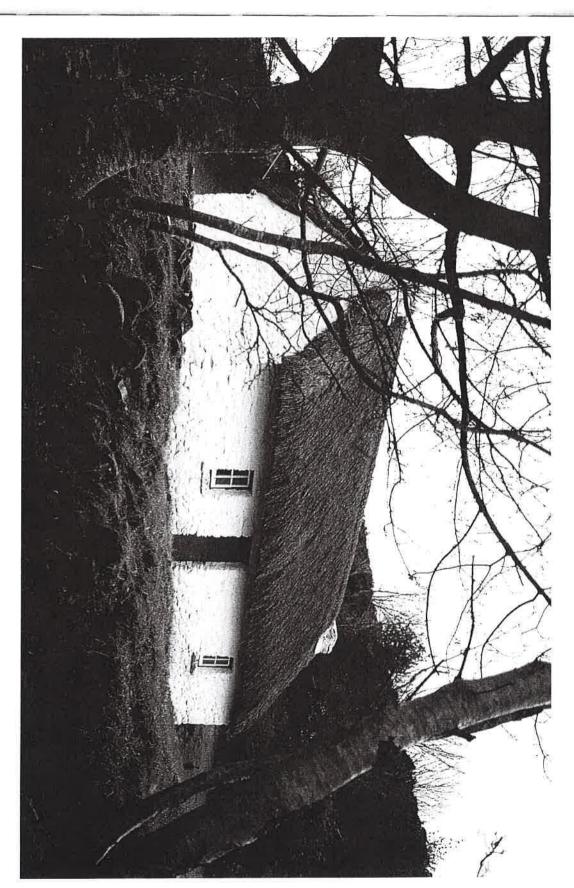
In Wexford the traditional cottage/farmhouse has a hipped and thatched roof which is usually steeply pitched. The hearth is invariably in line with the entrance lobby, which has a screen wall to protect the kitchen's privacy. Here the rooms contained in lofts within the roof space are reached by pulldown ladders at each end of the kitchen. Wexford has made efforts to protect its traditional cottages and farmhouses, by providing small grants, for instance, for the maintenance of thatched roofs.

MacAllister Cottage OF IMAAL,

ge is an interesting of the vernacular style. It is re of the Office of Public iter, saved Dwyer's life by a decoy, sacrificing his life nd is open to the public d in a traditional manner, wyer could escape nglish in 1799, Another of his group, Samuel ons with Michael Dwyer, a ebel who was trapped here lacAllister Cottage has served because of its

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VERNACULAR COTTAGES IN THE SOUTH AND EAST





Lemaght Road, knockatallon Co. Monaghan



Knocketallan Cross, Co Monaghan

Local cottage visit.











Mr Fauric Foy Reach Hill College Poom 29 Monaghan Town Co. Monaghan.



Room 29
Monaghan Town
Co. Monaghan
17-9-13

Dear Sir/Madam

I am a student in Beech Hill College in Monaghan Town. I am in my final year and I am studying Construction Studies for my Leaving Certificate. For my Leaving Certificate project I intend to make a model of a local vernacular cottage that is in my area. I would be very grateful if you could send on any information you have about vernacular buildings that could help me with my project.

Thank you in advance for any help you can provide.

Yours faithfully

Pauric Foy



Mr Pauric Foy, Beech Hill College. Room 29. Monaghan



Architectural Services 6 Head Office. Jonathan Swift Street, Trim, Co. Meath.

Serbhisí Ailtireachta 6 Ceannoifig. Scráid Jonathan Swift. Baile Átha Troim, Co. na Mí.

Telephone (046) 942 6341 (046) 943 8409 Fax Web www.opw.ie

Dear Pauric,

Thank you for your letter dated 17-9-2013. Unfortunately your current enquiry is somewhat outside OPW's core area of responsibility. We do not have information readily available on vernacular cottages as covered in your project description. I was able to source published information on the restoration of a cottage in Co Wicklow carried out by the office as a home for the National Park Service in 2002. (extract enclosed)

The OPW holds drawings on state owned property and information on particular state constructed buildings for example courthouses, schools, Garda Stations, Visitors centres, constructed over the last two centuries. If you could identify by name and location a particular building of interest within this category some information including drawings may be available

Please refer detailed enquiry to Head Librarian, OPW Head Office, Trim, Co Meath

OPW is also responsible for repair and maintenance of these buildings. A particular query on a particular aspect (s) of traditional construction might be referred to:

Conservation Unit- Architectural Section, OPW, 52 St Stephen Green, Dublin 2

OPW are also partly responsible for management and care of National Monuments a register of which is available on the following website.

http://www.archaeology.ie/

Should you require father information on any particular structure within this category I would advise making National Monuments- Architectural Section, OPW, 52 St Stephen Green, Dublin 2 contact with:

I would like to refer you to a book which I think would be of use to your project about vernacular buildings-Your local library could probably source a copy.

A Lost Tradition - The nature of architecture in Ireland

By Niall McCullough and Valerie Mulvin

Published Dublin Gandon Editions Dublin 1987

ISBN: 094664103x

The following websites also provide useful information.

Home Owners Handbook by Mourne Homesteads Experience (Co Down) Traditional Buildings in Ireland

http://www.nihe.gov.uk/traditional_buildings.pdf

Your local heritage officer may also be a useful source of information, Monaghan County Council http://www.monaghan.ie/en/services/heritage/

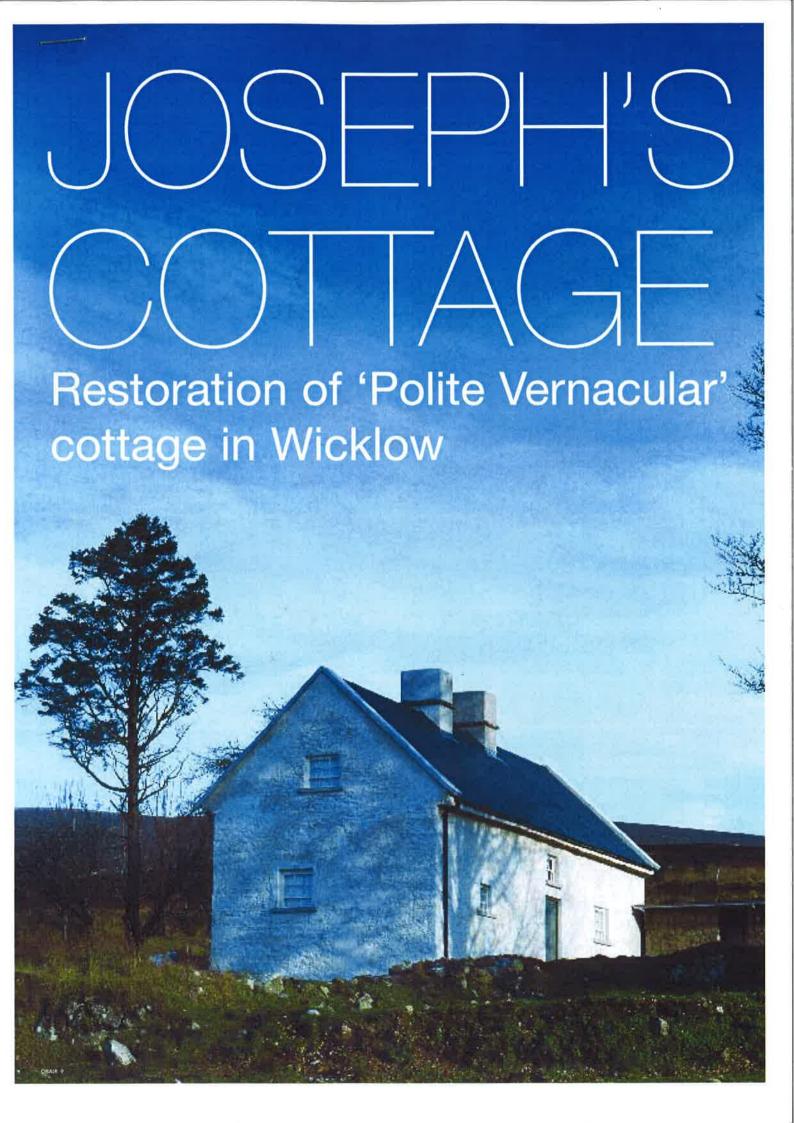
I wish you every success with your project and hope that the limited information will be some assistance.

Yours sincerely,

Pat Boyle

Senior Architect, OPW Architectural Services

23rd September 2013



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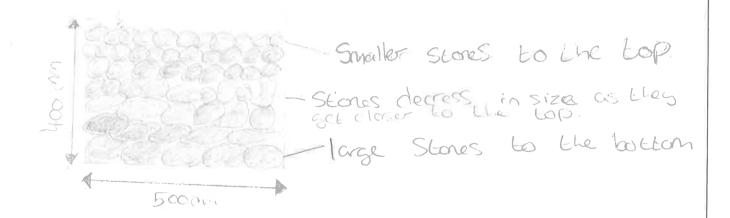
Vernacular cottages relevant information

- Single story rectangular building.
- Generally thatched but sometimes have tin roofs or slated.
- Each room enters into each other without any hallways in the building.
- End walls generally face the prevailing winds.
- Entrances are placed at the front and rear of the buildings. rarely an entrance through the side.
- They are built with materials that can be locally sourced.
- They are built in sheltered areas and are rarely built on top of hills etc.
- They fit well in the landscape as they were built with the locally sourced materials.
- They have small windows.
- Sometimes cottages incorporated half doors the keep animals out of the building and to let the sunlight into the building.
- They were built with no major plans in mind and they had no planner.
- Walls where coated with render and white washed but many were left with just the bare stonework exposed.
- The builders where not professionals.
- The construction project is very intuitive as it was designed while it was being built.
- The building was left open for further modification, many cottages had a turf shed added to the gable wall after being built.

Vernacular cottage construction

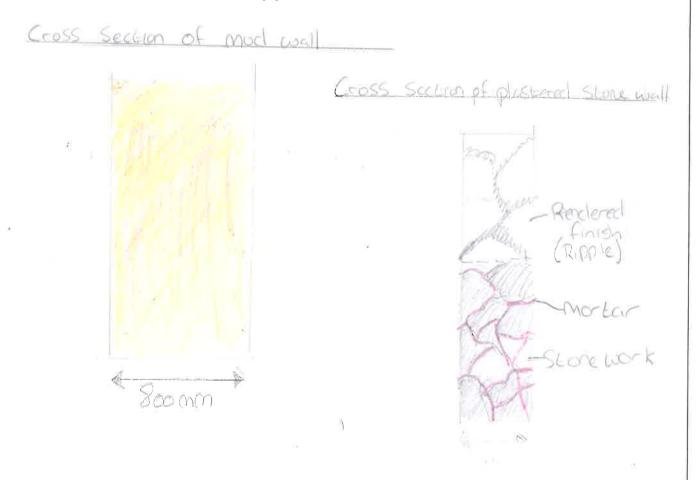
Foundations.

Foundation where constructed using local stone to the area where the cottage is being built. They did not use any form of cement in the early foundations .Foundations where approximately 500mm wide and resembled a modern day strip foundation to an extent.



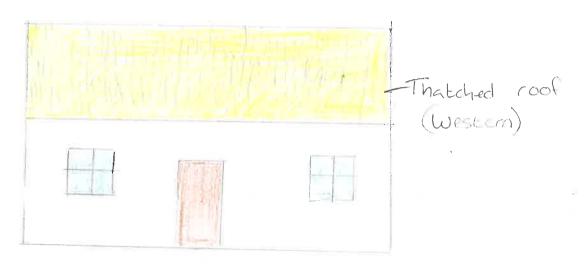
Wall construction

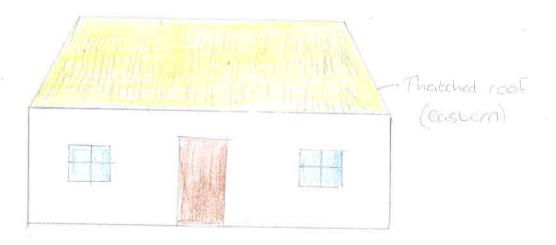
Wall construction varied throughout the country most areas used local stone and mortar to build walls. Stone walls are a type of masonry construction which have been built for thousands of years. But some areas which had a lack of stone suitable for construction such as Wexford mud walls where constructed. Mud and clay mixed with straw tightly compacted and allowed to dry made a suitable building material the mud walls where then finished by coating them in several layers of lime wash which protected them from harsh weather. Mud walls where commonly between 800mm and 1000mm thick to support the rest of the house.



Roof types

Vernacular cottages used many different roofing materials the most common type being a thatched roof .Thatched roofs where cheap to construct as they used local resources. In the mid 20th century most cottages that originally had thatched roofs got replaced by the more reliable corrugated tin or a slate roof. Cottages in the east incorporated a hip roof in their construction.

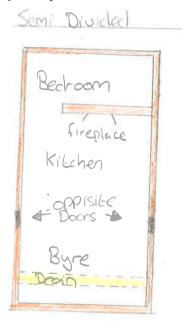




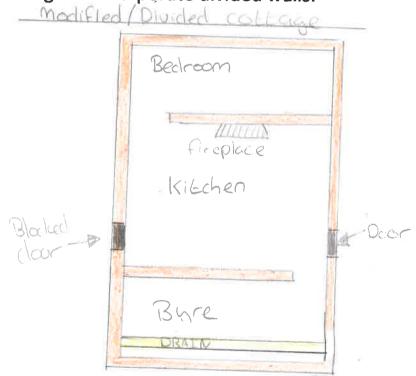
Western cottage design features

- Originally where undivided.
- Slightly later cottages then partly divided.

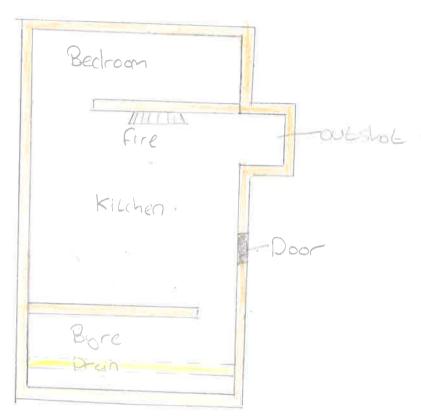




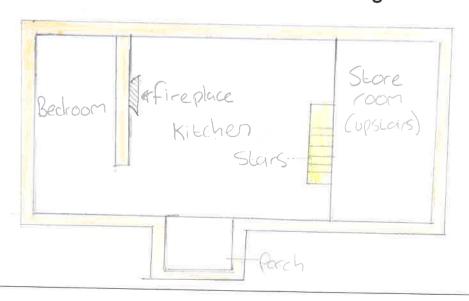
 The majority of undivided cottages where modified at some stage to incorporate divided walls.



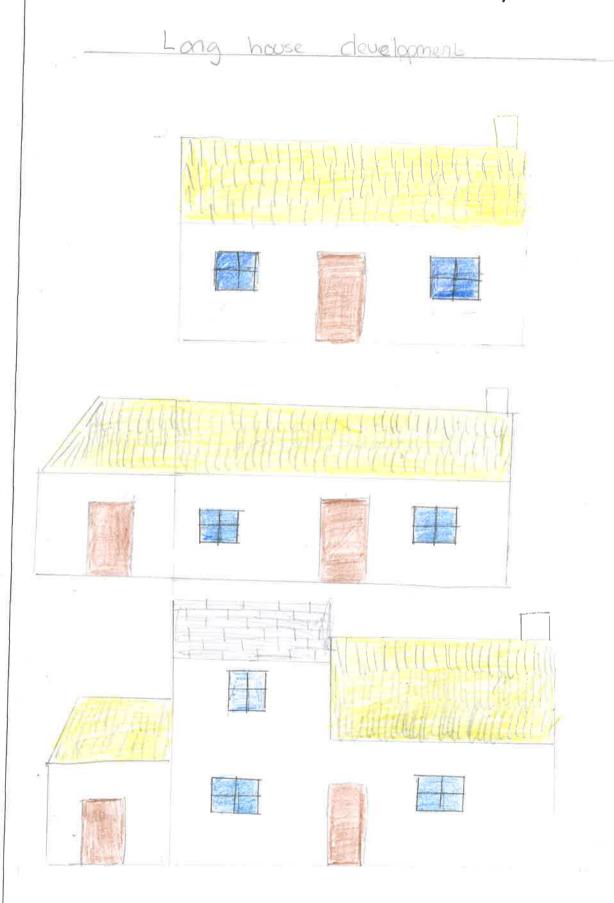
 The next main addition to vernacular cottages was a bed outshot which was a projection which incorporated a bed in the kitchen which was designed for the eldest member of the family as the bed was closest to the heat source in the house.



 Cottages then generally where designed to only have the people inside the four walls of the cottage. A loft was a common addition above one of the bedrooms the cottage this provided an extra bed space or a space for storage. A porch was also a common addition to the cottage.

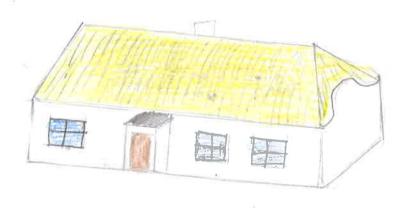


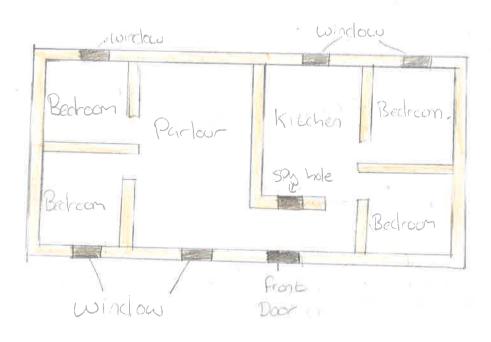
 Long houses then developed out of cottages from all the additions that they incorporated over the years



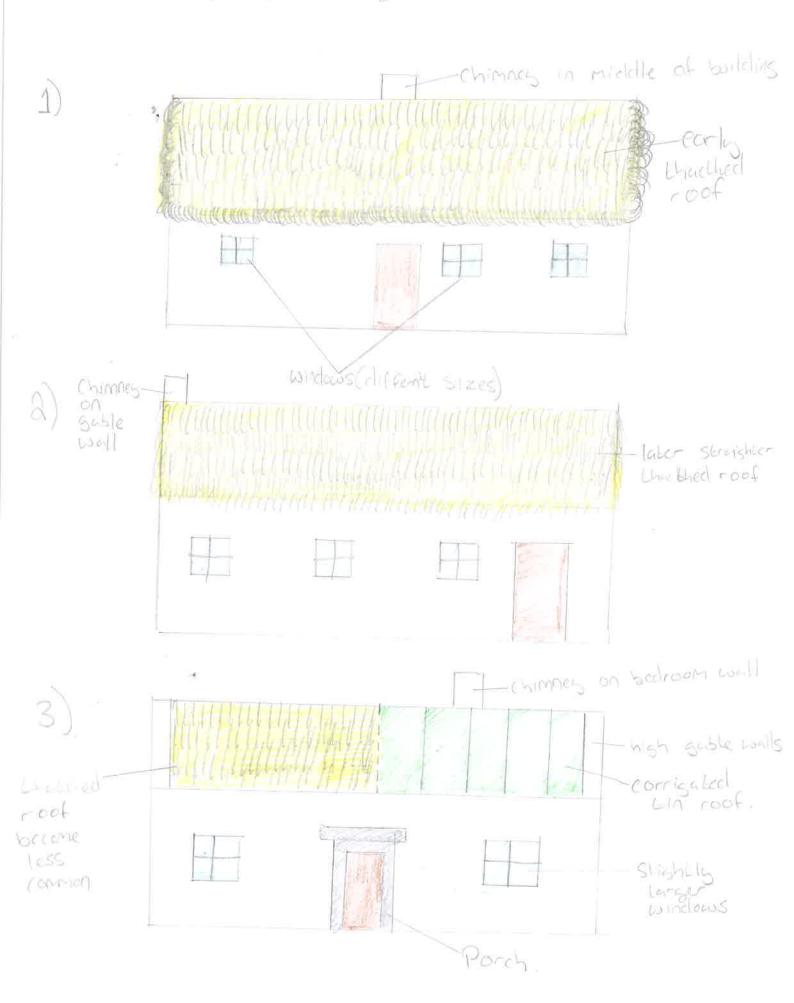
Eastern cottage design features

Eastern cottages where generally more complex than western cottage they incorporated features such as a hipped roof, spy hole and separated bedrooms .Roofs where usually thatched using wheaten straw instead of the flax that was normally used in the west.





Icish college Elmeline



Irish cottage timeline

1: Early cottage: 1700's

- Fire place and chimney was built in the very middle of the cottage as these early cottages only consisted of one room and where not subdivided, by build the fire place in the middle of the house these projected the heat as evenly as possible around the house.
- Windows where always very small, the size of windows in a house where taxed according to their size. Poorer Irish people often opted for smaller windows due to this reason. It was common to see windows of different sizes in these cottages as people tend to use what ever size window they could find and the byre that was sometimes part of the house didn't require a large window.
- Doors where wooden made from local hard woods and made up of wooden boards, a basic latch for the door was also made out of wood. Most cottages had two doors. A second door straight through the back of the cottage was common.
- The roofs where thatched using whatever thatch local to the area such as barley straw thatch, The edges where folded around the high gable wall and overlapped by quite a bit. Roofs where quite steep.
- Walls Where commonly plastered using a simple render mix, the finish gave a rippled effect, a lime whitewash was then used to protect the wall from weathering. This continued and was common on cottages from century's.

2: Later cottage: 1800's

- Fire places tended to be built more commonly on a gable wall and the cottages where then built semi divided.
- The byre was built away from the cottage more often but it was still common for a byre to be built on to the cottage.
- Larger windows where used occasionally however they where still remained quite small. It was also common for each window to be the same size by this time.
- The thatched roof was still used but it did not tend to overlap the gable walls as much and was straighter around the edges.
- The wooden door remained the same as before but iron latch's and iron hinges became popular as black smiths where more common. The back door in the cottage became less common and was sometimes blocked off in the older cottages.

3: Late cottages: Early to mid 1900's

- **Fire places** where built on an internal wall in the house as by this time the house was sub divided into 2 or 3 rooms. By building the chimney on an internal wall it helped produce heat on the room that the chimney was built beside.
- Roofs Although thatched roofs where still common people began to
 used tin sheets as a roofing material as it had many advantages over the
 traditional thatch roof, it required very little maintenance and was
 simple to construct, it was common to build gable walls up level with the
 roof at this period.
- The wooden door remained unchanged but in some cases a split door was used to allow ventilation into the house without letting farm animals such as chickens into the house.
- **Porch** People began to build a porch on the front of the house, sometimes a spy hole was put on a kitchen wall so people could saw entering the house from the living quarters.



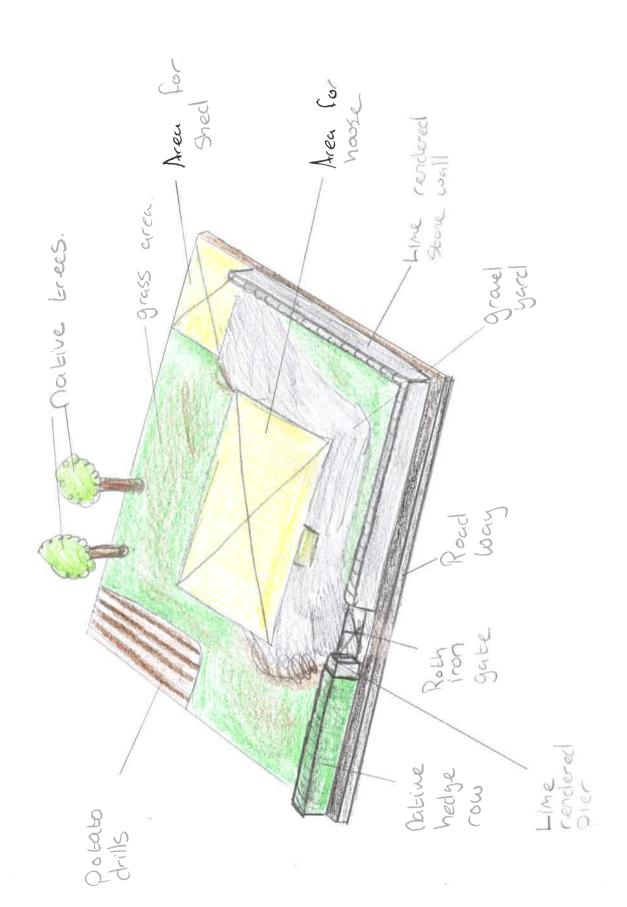
My design

After deciding I wanted to make a model of a vernacular cottage for my Leaving Certificate construction studies project I decided it would make most sense to construct a vernacular cottage in my area for a couple of reasons.

- 1. I have easy access to the cottage for measurements, photos etc
- 2. I have a particular interest in the cottage in my local area as it is part of our local heritage.

After taking a list of full size measurements of the cottage I decided to construct a 1:25 scale model of the cottage, I had an idea in my head of what size I wanted my project to be and this scale matched it best. I didn't want my project too small as it would have been difficult to work on and I didn't want it too big as it would not have been easy to store in the construction room. I had to remember that there was also a base to be built with my project and not to make my artefact so big that it would need a large base to be displayed on.

dear for burk shed



Week	Work to be done	Work done
1	 Mark out Card Cut out Card Cut strips of wood to support card 	
2	 Glue strips of wood to card Begin work on windows Cut out card for porch and glue on wooden supports 	
3	 Glue in match sticks to form the window frames Glue the porch to the front wall of the cottage 	
4	 Glue the four walls of the cottage together Begin work on the roof Glue in final supports to the walls of the cottage 	
5	 Glue roof to the cottage and Glue supports to the roof also Add the strips of timber to the edge of the roof to replicate the high gable walls Cut out corrugated cardboard to replicate the tin roof 	
6	 Glue down corrugated card to roof and glue down ridge tile Make a chimney for my cottage by using a small block of wood and dowel. Paint window frames, door and roof 	
7	 Plaster the walls and chimney Apply finishing touches to main model such as painting the chimney pot 	V/
3	 Begin working on the base of my model Cut out the base Apply the first base paint coats 	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	 Mix fine sawdust with the paint to replicate the textures of gravel etc Make small turf shed for outside 	V
.0	 Cut out timber to replicate spot height for vegetable patch Use modelling clay to make up potato ridges Paint the vegetable patch 	<i>y</i>
1	 Finish the small turf shed, plaster and roof similar to cottage Finish all paint work to the base Gather twigs to replicate trees outside 	1
2	 Fix model and shed to base Apply fishing touches to base such as fixing the trees to the base 	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

Materials

- 2 sheets of card
- 10mm x 10mm wooden strips
- Match sticks
- Modelling plaster
- Paint
- Glue
- Small stones for external wall
- Wooden base

Tools

- Knife to cut card
- Rule
- Hot glue gun
- Cutting board
- Paint brushes
- Saw to cut strips of wood
- Pallet knife plaster model

Cutting list

Cottage

Front and back (Card)	351mmx170mm
Sides x2 (Card)	125mmx103mm
Chimney front and back(Card)	35mmx30mm
Chimney sides x2 (Card)	35mmx30mm
porch support timbers x4	5mmx10mmx95mm
Porch top (timber)	65mmx35mmx5mm
Roof panels (Card)	350mmx170mm
Roof edges (Timber)	67mmx13mmx4mm
Porch sides (Card)	95mmx30mm
Chimney top (Timber)	30mmx30mmx4mm
Chimney pot (Dowel)	6mmx10mm
Window sills x2 (Timber)	45mmx5mmx4mm
Ridge tile (Heavy paper)	340mmx20mm

Shed

Front (Card)	130mmx110mm
Back (Card)	130mmx85mm
Sides x2 (Card)	110mmx100mm
Door (Timber)	85mmx40mm
Roof edges(Timber)	14mmx105mmx4mm

Base

Base (Timber)	615mmx610mmx12mm
Spot height (Timber)	260mmx130mmx12mm
Front wall (Timber)	260mmx30mmx15mm
Front wall (Timber)	250mmx30mmx15mm
Front gates x2 (Painted Brass)	50mmx30mmx3mm

Working Drawings

Cottage Elevation and Enduran

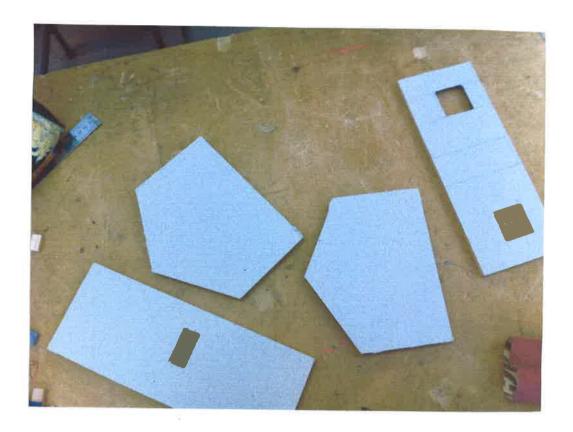
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Shed Eleuation and Enduien

Step by step Procedure

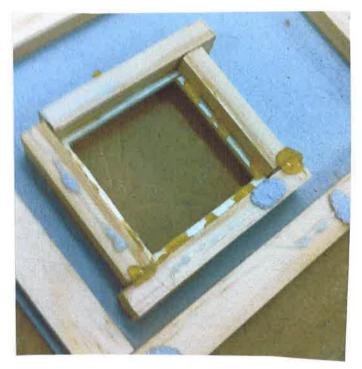
• Mark out and cut out the card.



• Cut out strips to support the card, cut strips to form the inner window frames.



• Use timbers to create the base on which to make the window frames, match sticks where used to replicate the window frames.



• Carefully glue in match sticks to replicate the timbers in the frames.



• Glue the 4 walls of the cottage together



 Construct the porch using card and timbers to support. Cut a small door out of timber and also using a small piece of timber to replicate the roof of the porch



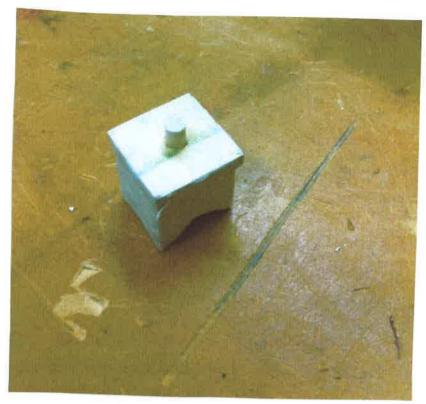
• Glue the porch to the base, finish all timber support work on the cottage. Cut out and glue down card for a roof base, paint window frames and door.



• Glue window sills in place and the timbers to replicate a high gable wall.



• Make up the chimney for the cottage using a block of timber and a small dowel to replicate the chimney pot.



Plaster the walls of the cottage, aswell as the chimney



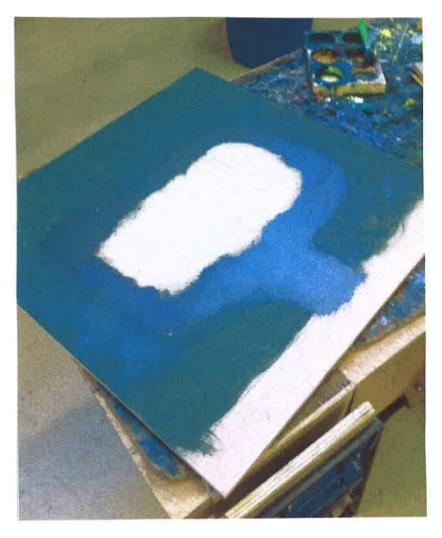
 Paint the corrugated card to the desired colour, cut the card to the desired size for the roof, cut a ridge tile and paint



• Glue the roofing sheet to the model along with the ridge tile, Glue down the chimney on top



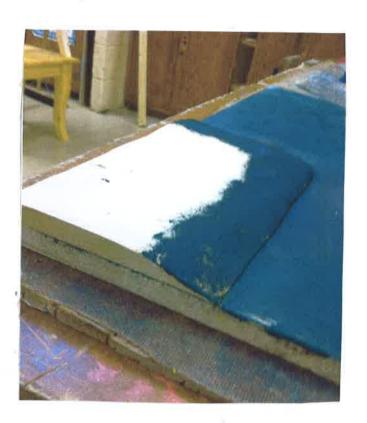
• Cut out base and apply the first layers of paint. Cut out the timber to replicate spot height for vegetable patch. Cut to lengths of timber which will form a base for the wall.







Use a chisel to round off edges on the top surface of the wall.
 Sand edges of spot height glue down and begin painting, Use modelling plaster to form the potato ridges.





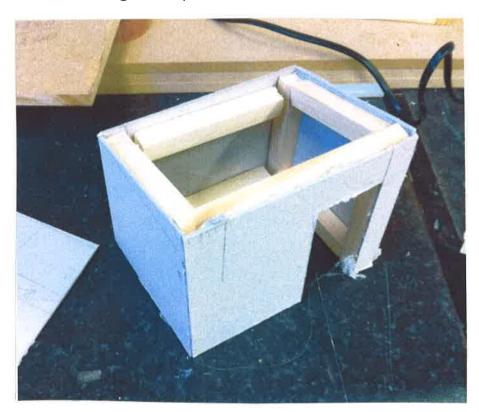


Continue with paint work to base to replicate the ground on the surrounding area. Paint potato ridges. Plaster the walls with modelling clay.



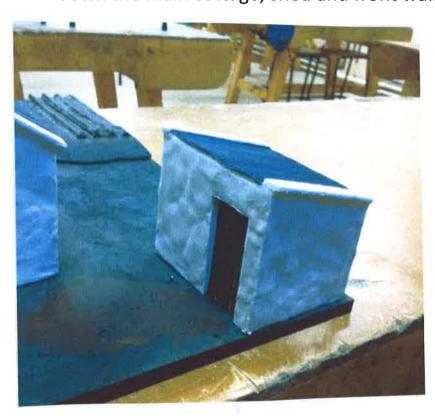


Construct the small turf shed for the base similar to the main cottage using card and timber supports, roof the shed similar the main cottage and plaster.





Apply finishing touches to the shed such as adding the door painting it and painting the corrugated roof giving it a more weathered look. Apply the finishing touches to the paintwork on the base and glue down the main cottage, shed and front walls.





Apply all the finishing touches such as the addition of small trees outside replicated by using twigs, a small firewood pile beside the small turf shed. I also added net curtains to the windows in the cottage to finish off.









Evaluation

Evaluation

Planning and use of time.

I found the plan I made at the beginning of the year fairly realistic some jobs got done quicker than expected and some jobs took slightly longer than expected such as the plastering. The plastering was fairly tedious work and required a lot of patience in areas such as around the windows therefore taking slightly longer than expected. I was satisfied with my time management as I got the project completed in the 12 weeks set out for it.

Function

I think my project fulfils the brief well, it is a fairly accurate representation of a traditional vernacular cottage in Ireland. I picked a cottage in my local area to use as the main piece of my project and for the base I decided to bring together different aspects around these cottages to create an accurate representation of the surroundings of a traditional vernacular cottage. The model is a very accurate replica of a typical traditional vernacular cottage in its surrounds. I find the base on which my model sits to be very flat however, as most vernacular cottages where not built on very flat sites, I tried to counter this by adding a spot height for the potato ridges. If I was to make the base again I would have used a belt sander to create a more rough and natural looking terrain.

Appearance

I am very pleased with the finish of my project. I am particularly happy with the finish the plaster gave to replicate the plastered walls as when I begun the model I was unsure of how I was going to achieve an accurate finish on the walls. I chose to use cardboard and support it by timber over using just timber as the plaster I used is much easier to apply to the cardboard as opposed to timber. I am satisfied with the 1:25 scale I used this proved to be the best suited scale for the project, I did not want to make my project much bigger as if it was any bigger there would not have been sufficient room in the class room to store my project. I think I chose my scale well as it did not hinder the detail of my project. The project replicates the buildings feel well the plastered walls have the correct plastered texture I was going for as does the corrugated roof. It was decided to mix fine sawdust with the paint used to paint the base to achieve a more textured terrain outside the building. I used a sufficient amount of timber support throughout the model in order to support the cardboard in the model. The model had to be built sturdy so the plaster could be applied. Overall I am satisfied with the appearance of my model.



Conclusion

I learned allot about my chosen topic of vernacular cottages, I enjoyed the research as I have been interested in historic buildings from an early age, I have a particular interest in vernacular cottages however, and the one I have done my project on in particular as it is in my local area. I enjoyed making the model and I found it interesting as I have learned many useful craft skills such as model making, window making and plastering in particular. I used the hot glue gun for the first time while making my project and I used it quite regularly. I have already found my knowledge useful as I can now pick out the different features of vernacular cottages around the country. If I was to make my project again I would make the base on which it sits more rough as I used a flat piece of timber which resulted in a flat base, I did however texture the base in order to replicate the terrain, if I was to do it again I would either make the model on a base with a gradient or perhaps create a rougher surface on the flat base by gouging it with the belt sander and thus creating a rougher and slightly more accurate site. I enjoyed making this project, the project got constructed smoothly and I was happy as it not being rushed. This was achieved by my careful time management, this carful time management allowed me to keep organised. I am happy I chose this project in particular as I have a keen interest in the topic of vernacular cottages and I feel this is what kept me motivated to complete my project.

