Podcast

Future-proofing the Past

Previous Episode: The Past in Mind (/podcast/past-mind)

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Guests: Henk Alkemade (NL) and Elin Tinuviel Torbergsen (NO)

Introduction: Like many things in the modern world, digitalisation has transformed the way we interact with the past and opened opportunities for visualisation, curation and sharing. But how do we actually use these digital tools? How do we use them to engage the public? And how do we ensure our digital data is a fair representation of the past? **Henk Alkemade** was originally trained as a physical geographer but went into a career in IT following his studies. **Elin Tinuviel Torbergsen** currently works for the Museum Nord as a curator for the West Lofoten Department.

Meet our Guests

Henk Alkemade (NL)
Henk Alkemade was originally trained as a physical geographer but went into a career in IT following his studies. In 2007, he joined the Dutch National Heritage Agency as an IT manager. This gave him this opportunity to become involved in Europeana projects such as CARARE and LoCloud, which helped reignite a passion in cultural heritage. Henke now works full time in Cultural Heritage, connecting this heritage with IT through his work as a senior specialist in historical landscapes.

EXARC Member: Elin Tinuviel Torbergsen (NO) (/members/venues/lofotr-vikingmuseum-no)
Elin Tinuviel Torbergsen currently works for the Museum Nord as a curator for the West Lofoten Department. In addition to this, she is also working on her PhD in media and communication. In these roles, she is attempting to identify digital solutions connecting the archaeological objects on display in the museums with their original places of discovery, and their wider cultural landscapes. Part of this work includes creating digital AR simulations of the world in the past... **Read More (/members/venues/lofotr-vikingmuseum-no)**

Transcript

It's the first Friday of the month, which means that it's time for the next episode of #FinallyFriday, bringing you insights and discussions from around the world focussing on experimental archaeology, ancient technology, archaeological open-air museums and interpretation. **Phoebe**: Hello and welcome to #FinallyFriday. My name is Phoebe Baker and today I'm joined by two specialists from our EXARC community focussing on digitalisation.

Henk Alkemade was originally trained as a physical geographer, but went into a career in IT following his studies. In 2007 he joined the Dutch National Heritage Agency as an IT manager, which gave him an opportunity to become involved in Europeana projects such as Carare and LoCloud, which helped reignite a passion in cultural heritage. Henk now works full-time in cultural heritage, connecting this heritage with IT through his work as a Senior Specialist in Historical Landscapes.

Elin Tinuviel Torbergsen was working for the Museum Nord in Norway as a curator for the West Lofoten Department, which includes Northern Norway's most visited museum, Lofotr Viking Museum in Lofoten. Now on research leave, she works on her PhD in Media and Communication at the University in Oslo. Elin is creating digital solutions connecting the archaeological objects on display at Lofotr Viking Museum in their original places of discovery and their wider cultural connection. Part of this work includes creating digital applications which show an AR-simulated Viking landscape in the past.

So a huge welcome to both of you. Thank you so much for joining me. I'm thinking it'll be a really, really fun episode. So to start, I'd like to ask you a bit more about your interest in digitalisation. It's quite a broad topic and starting on a positive note: which aspects are your favourite?

Elin: Well, I didn't actually have that interest in the beginning, because I'm specialised in archaeology. I took a bachelor and a master at the University of Oslo. And when I started working at Lofotr Viking Museum, I noticed that there are other ways to present the dissemination to reach out to the wider public. So I got kind of fascinated in what Gunnar Liestøl, who is a professor at the University of Oslo, but also connecting Museum Nord, was doing. He was actually creating a digital prototype, called 'situated AR-simulation', which visualises the past in a very interesting way. So thinking like that is something I want to do, you know, use archaeology and media dissemination. So that's how I got a PhD in media and communication at University of Oslo.

Phoebe: That sounds really cool coming from an archaeological perspective and then realising this could be quite a cool way of showing what archaeology is doing and how we understand the past.

Elin: I'm also a travelling coordinator by education. So to actually use tourism, archaeology and digitalising communication, I think that's a good thing to do today since we have to communicate out what we are doing to the public. To have that background, it's helped me well.

Phoebe: Yeah, sounds really cool. What about yourself, Hank?

Henk: For me, it's a bit comparable, but it started very early because when I was a little boy walking in museums, I saw all these objects and they were displayed in sometimes chronological order or by area or something. And I always thought, how cool would it be if you could connect all these things from this museum, that museum and all sites where it was found and create some kind of a context, a story, which really fascinated me. This was in fact how it started. My favourite part of digitalisation is connecting the dots, creating context. Like Elin said, recreating, visualising the past. And I really like for instance the work on recreating the Viking landscape. It's one beautiful thing. I hope we can do more of those things.

Elin: Yeah, true. I actually have some of my guides, they're trying to explain to the guests what things look like. We have reconstructions like the Viking chieftain's house at the Lofotr Viking Museum and the Gokstad ship, but sometimes the guests can't imagine what the guides are saying. So I hope this application can help them to at least give some representation.

Henk: Well, my great vision, my ideal would be to recreate the past and stand somewhere and see what happened there in several moments of the past. It's a boy's dream, huh?

Elin: Yeah, it is.

Henk: Still trying to live it!

Phoebe: Yeah, I can see why. I'm a Paleolithic archaeologist and I do often kind of stand and I look up and I'm like, what actually in the world is the same? What would they have seen that I see and things like that? We've had reconstructions in archaeology for almost as long as archaeology has been around. But when do we see the first use of digital tools applied to archaeology? And I guess that doesn't have to necessarily just apply to reconstructions, but kind of anything digital. Is it as soon as we see computers or is it a bit later for us?

Henk: I think it already started a long time ago, decades ago, when we started using text editors, for instance, to record the documentation and later on digital photography to add to it and so on. And now we have all kinds of beautiful tools to get the data in, like photogrammetry and LiDAR and laser scanning. We have beautiful tools to create models, 3D and otherwise. We have tools to do predictive modelling in GIS. So it is a long journey from the first computers and the first databases we started using in archaeology to where we are now. Opportunities are more or less limitless at the moment, if you have enough money and expertise, of course… These last few years, things have sped up enormously. It's really fascinating to see all the developments nowadays.

Elin: Yeah, I was thinking about GIS which has been used in archaeology quite long now in Norway. For those who don't know what GIS is, it's a geographic information system, digital database system for processing location-specific information. We are using it mostly for mapping sites, archaeological sites, and also organising and storing data about the sites and objects. So it's quite a good tool.

Phoebe: I really like GIS. I like how much you can do with it. On its surface, it's just a mapping technology, but actually it's quite powerful.

Henk: I know in the Netherlands, we also use it for predicting where there is a high probability of finding archaeological remains, for instance.

Phoebe: Henk, you kind of touched on it in your answer, saying in the last few years digital tools have sped up a lot, or use of digital tools has. Was this going to happen anyway, or do you think it's at all impacted by the effects of things like COVID?

Henk: I think it was going to happen anyway and it was already happening but COVID sped things up, I guess. There was a general interest in digitalisation, not only in archaeology and history, but

everywhere. Perhaps especially the tooling regarding the creation of models, like 3D models and virtual reconstruction and so on, they may have sped up extra in this period to give people some experiences they lacked when they weren't able to go out and do it for themselves and see it for themselves.

Phoebe: Do you want to add anything to that, Elin?

Elin: For us at the Lofotr Viking Museum everything closed down, like for everybody else, and we were just sitting there and don't have our daily work. So it was also a time to do more digital dissemination on social media. I saw some museum creating a complete exhibition you can actually watch at home, but we didn't do that. But we did join a different platform for dissemination and we also had time to documenting and photographing objects to put that on a database so people actually can see what we have in the exhibition. So it gave you lots of new possibilities, but also, I think it's a bit funny… because lots of employees didn't know how to use like Skype, Teams, Zoom, so they didn't have a choice, but they have to learn it. So that was something new and I did not like it because when you're sitting there in a group, you can see the body language much easier. So you have to actually learn when you can talk and there's a different way to communicate digitally.

Phoebe: Yeah, definitely. Digitalisation affects all areas of life and the same is true for museums and archaeology, especially in COVID. So talking about digitalisation, what actually is the process of digitalisation, of making an object digital? How do you get it from being a physical object to being on the screen and does it depend on the context of the object and where it is?

Henk: Shall I start? The reason I would like to start is because I am working on a project now which is called 'From Shelf to Europeana' and that's describing the workflow of digitalising an object or objects, collections, from a shelf to Europeana where they are displayed. Often on their own website as well, of course, but also on Europeana. We do that especially for small organisations who lack expertise and budget to make a large project of it. And we try to give them tools they can use and guidelines without any cost, free, open software. So there is a kind of a workflow for digitalisation and it generally begins with some plan. You want to digitalise something because you want to reach certain goals, preferably part of a long term strategy. And then you go through the workflow by selecting what part of your collection you want to digitise and especially be clear about the purpose of digitalisation. Is it for the general public, is it for researchers or preservation? Then you need to get the equipment, the staff, the time, the expertise, et cetera. It's creating a project, that's the general idea. You have to be clear on what kind of documentation you want to add to the digitised collection, like metadata, paradata. Metadata is telling you what you really have. It's documenting that and it makes it findable. The paradata says how you created these data. The process, the tools you used, the equipment you used, etc. When you have done all that, and that's very depending on the context, for instance, get your objects out of storage, you prepare them and you digitalise them. You create in that way a digital collection that can be displayed. So this is the general workflow. One of the most important things we come across is, of course, the lack of budget and the lack of expertise, which is common to many, many smaller organisations. Does this answer the question a bit?

Phoebe: Yeah, definitely. Saying that there is a clear workflow that we need to follow and making sure that we add things like metadata and paradata. Do you want to talk a little bit about what kind of techniques you actually do? Is it scanning? Or are these very kind of context-focussed?

Henk: It could be scanning but you can also digitise whole buildings or even landscapes, and then it's generally photogrammetry that is used. For instance using drones, flying around the building and taking pictures. So that's very context-depending, what kind of equipment you use and also if you have budget…

Phoebe: Would you like to add anything to that, Elin?

Elin: I was thinking about my project because he mentioned you can just get objects that you already have. Some of the objects, like the chieftain's house, we don't have. We're going to make a 3D construction of three houses. One already is really documented, the Viking chieftain's house. And then they have a smaller house, because the Viking chieftain's house is really huge. It's 83 metres and the lesser one, it's like 20 metres and it's like a normal Viking house. And then we're gonna have like a Middle Age house which again is really skinny and long, but it looks really like the other longhouses, but it's completely different in other ways. And these we only have like reports, nobody has made it before in 3D construction. So, for me it's harder to actually create it. Of course, I want to say that I'm not creating it myself. I actually have an employee who is doing it. He has a master's in archaeology and a bachelor's in game design. So he's quite good at doing this. He is modelling this in the free program Blender. For us it's really important to use what we have out there for research, but some of the researchers, again, do not agree how tall the building was or the construction of the building. Some things they agree on, which we can see in the fundament of the house, which says a lot about the size of the house, or if there are different rooms there, or if it's a barn inside a house. But the rest you have to make [an] interpretation and sometimes I have to say, okay, we'll go for this interpretation. So it's a little bit scary but I have found a way to move around it by being a bit inspired by Facebook, Snapchat filters to show different types of roofing on the house, so the guests can understand that there are different interpretations. The same about the structure, the roof bearing system. So they make it more easy for me to show them there are different interpretations. We do not agree totally on how the houses were. And because they also have this problem today that when they visit the Lofotr Viking Museum and see the physical reconstruction of the Chieftain's house, they believe it was exactly like this. And that's something I don't want. I want to actually show them there are different interpretations.

Phoebe: Yeah, such a cool use of a digital tool!

Elin: The guy that is making this, his name is Fink, and he's really good at this. He used the game engine, Unity. It's really helpful to actually transfer the data again to another platform that I'm using by Gunnar Liestøl called a SitSim platform. That will make it easier when they download the application on the phone, use the camera on the phone, and then they can see through the phone the virtual landscape. And I also want them to go inside the houses and also see detailed construction on the timber, because the timbers are hand-cut so they have to be different. They cannot be the same timber like we have today, the timbers are much the same. But here you can see they all have this individuality.

Phoebe: I can imagine that makes the models quite complicated to put together!

Elin: Yes, it takes much more time. But then again, I'm quite lucky because I got Museum Nord help me, give me a budget for funding to create this.

Phoebe: Yeah, it sounds really cool.

Henk: It sounds really great and one of the things… you can show differences in timber or in roofing, but often it's hard to see what is interpretation and what is actually raw objective data.

Phoebe: What do you think the features of a good AR model are and, as you say, when does it become too much interpretation and how can you tell what's interpretation, what's not?

Henk: I don't think there can be too much interpretation, but it should be clear what is and what is not. Perhaps interpretation is kind of a view on what you have, on the data you have and the materials you have. And this view changes through our history. In the past people looked differently to that and had different interpretations. Nowadays we are also looking at inclusion, diversity, decolonisation. It's probably not relevant for the Vikings, but I know in Dutch history, we do have this issue. So it brought me thinking about how to separate what you have and the interpretation and perhaps have layers of

interpretation that developed in time on top of it. And that's more of a philosophical problem than perhaps a practical problem. But the thing is, the more you reconstruct and the better you do it, the more true it will seem to the audience. So you have to be clear about what you edit and what is found, let's say.. But perhaps Elin wants to add something to that.

Elin: I think that's amazing that you actually say it, because mostly in the museum dissemination we tell the story and we don't separate too much between the interpretation and the material, the object. So most of the guests don't understand that that's our interpretation of the Viking Age, for example, because if you visit different museums, you have different views on the Vikings. I haven't really thought about it in that line that you actually said now, that it will be important in the application to know that that's something we just have to interpret because we don't have the basic materials to actually tell us if it was like that. Of course, we also base it on historical, like the buildings. There are also things that we can see that's been written down in the 12th century, and there will be something there we can use, but we don't really know so much about the roofing in the Viking Age that much as we know later. So there is always this chance that it might be a misinterpretation. So that's what we don't want to do, and then we keep it more open to say that we have different interpretations. I don't know if you guys have tried the Pokemon Go game, because it was groundbreaking. It was such a realistic transportation between the real and the virtual environment. It seemed as if the character existed in our world. That will be a really important feature for my model is that it has to be that realistic. If the AR model is situated like I'm going to use it, it's important that the location is in the right place, so that the transportation between the two realities are seamless. So that they fit the geographical location so it won't be like you see the house is a bit off in the landscape. Especially when you're gonna move inside it, the walls have to be where the foundations are. So the people won't be walking inside the walls.

Phoebe: I remember how groundbreaking something like Pokemon Go was. Elin, you mentioned that you're working with someone else who's doing your modelling for you. Do you think that archaeologists or museum curators usually have the right kinds of computer or digital skills to achieve the digital outcomes that they want or do they frequently have to rely on other specialists? And do you think anything gets lost or anything gets added from that kind of interdisciplinary communication?

Elin: That depends on who you ask in the museum network. Lofotr Viking Museum is quite huge and it's a part of Museum Nord, which is like 21 museums. So lots of people working and some are really good adopting to digital skills and some are less. But I think after the COVID pandemic, people are so much better… to handle technology. But then again, the technology, it's changed, it's not stable, so you have to learn new things all the time. We have so much to do, as staff in the museum, to follow this trend on being better on digitalisation, creating models. You have to have really much time and you have to be really professional. I couldn't have done it without Fink because he is specialised in this and I'm not, and I wouldn't have time to do all the PhD, writing articles, doing courses and then creating this 3D landscape, it would be far too much. So I'm really happy to have a third party to come in and help. But it's good if a museum has expertise inside.

Henk: You're lucky if you have that expertise inside, because you're part of a greater museum or network of museums. The smaller ones don't have this. They lack the skills and the time and the budget because technology is changing so fast. You really have to be on top of it 24/7 to follow all this. It's really hard for the smaller organisations to do so. Sometimes they have someone who's enjoying it and doing it. But most of the time they're elderly people, often volunteers, and they don't have the time and they don't have the skills to be on top of all technological developments. So they do have to rely on other specialists in this case, but for that they lack the budget often. I hope we can find some way of having the bigger museums and networks helping the smaller ones to make the steps in digitalisation, because they curate a lot of our heritage, perhaps more than the big museums do when they're put together.

Phoebe: They were both really nice answers, thanks. Henk, I think what you said there kind of leads into your research on FAIR data, the ways that museums curate heritage. Do you want to talk a little bit about what FAIR data is and how digitalisation feeds into it?

Henk: FAIR is an abbreviation for Findable, Accessible, Interoperable and Reusable data. FAIR made clear that if you have data and it's only residing on your computer and no one else can do something with it, it's kind of useless. The whole idea behind FAIR is to share your data with the world around you. So you have to make it findable, which means often like tagging for keywords and locations, time periods, descriptions. You need to add metadata to make them accessible. You need to have a website, for instance, to show them. And in the long term, you need permanent identifiers, for instance, so they will be findable and accessible also for future generations. And if you want to share, you need to make them interoperable so other organisations or people can use them in their own systems. That leads to the final letter, the reusability of the data. Not only should you be able to find them, to access them and to get them into your systems, but you should be able to reuse them, and that's pretty much depending on the intellectual property rights that are applicable to these data. In general we promote to have them as open as possible. Digitalisation, which is done with being FAIR, in the end, gives you some requirements, for instance, like how to metadate it, how to organise your copyrights and so on. You need to investigate it and be clear about that. It helps you, being FAIR in the end, to do the right things at the start of the digitalisation. It's widely in use and promoted all around Europe. Also outside Europe, it's getting more and more attention.

Phoebe: How long has it been a focus in Europe for, do you know?

Henk: Oh, well, at least five years. I was working with some groups in the Netherlands who were also involved in describing what FAIR data should be like and the architecture of the data. At least five years, perhaps ten even when it started. But it's gaining momentum because everything starts being digitalised. Now it's also important to connect the dots and to reuse it in all kinds of ways. Perhaps ways we can't even imagine right now.

Phoebe: Definitely sounds like it's better for everyone. Everyone benefits if the data is FAIR data.

Henk: Yes, it surely is. But here again, we have the problem that often the organisations are not really aware of the future. They have their data, they have done a project, collected a lot of data, but what happens to it in five years, ten? So it's also about preservation of the data and that's an important aspect that's often, well, perhaps not overlooked, but underrated, especially if you're dependent on project money to do some digitalisation .

Phoebe: The digitalisation ends when the project ends.

Henk: Yeah, the people go away, do something else and the data gets kind of orphaned and perhaps we're sitting on a mountain of data that could be really useful, but cannot be accessed anymore or found.

Phoebe: That somehow wouldn't surprise me if that is the case in quite a lot of scenarios.

Henk: Well, I know a lot of digitalisation is project-funded and I've seen it happen all the time when I was working in the Dutch Heritage Agency. They are focussed on more long-term stuff. So you can imagine what happens when you're a smaller organisation, you have a project funded, and then it's done with the money.

Phoebe: Is FAIR data something that you think about, Elin, with yours or is it slightly different because you're trying to create this model of the world?

Elin: Well, in some way, I was actually thinking about different databases that we've been using in

Norway when we're storing, documenting and photographing museum's objects. I think it was 20-30 years there have been like the first databases. We had a lot of our objects stored in that database, but then we changed the database and we lost a lot of that information between two different technologies. I also think when you're creating something, in my case 3D models, I've always been a bit scared when I'm finished with my PhD the technology I'm using is outdated. But then again, we have the information, the 3D reconstruction, also text, audio, all the information we have inside that platform that's still usable. We can transform it to other types of platforms or new technology, so it won't be wasted. I think that's scary if you create something and it won't be used and nobody knows about it.

Phoebe: Yeah, definitely. And do you think that's one of the limitations of digitalisation is that it's so dependent on people, one, knowing that it's there and two, being able to use it?

Elin: Yeah definitely. The problem we actually already seeing now that some of the information we have in the Lofotr Viking Museum, the digital exhibition, I noticed that we cannot change the information we already have because the technology is not so easy to change, and it's so connected to the information that when we're going to use a new exhibition, we have to change everything, the tablets, the whole system, the audio system, and it's so expensive. There's no sustainability. We buy stuff like expensive computers, we make new tablets for the exhibition… The whole system has to be thrown away just to get changed information. In the future, I wish I can go in and change the information and still use the same technology. It's outdated so fast.

Henk: Yeah, that's really a big problem. Technology develops so fast and it's hard to keep track of it. And really expensive to move from one platform to the next, and then to the next, and then to the next, because it probably will go on like this. So it will always be a very expensive exercise to get your data and upgrade to a new technology platform.

Elin: Yeah. And I also see like Museum Nord have made a couple of prototypes that is not yet become application. We have made what we call a Vågar application, which is a port in the Middle Ages for importing stockfish or selling stockfish. It's a really cool application. It's the same platform that I'm going to use. It's AR situated simulation where actually you can see different historical periods at Vågar. When we made this it was just in a prototype phase. But it's so cool and a really good way to show the historical period there for the guests. So you want to make it now into application, but that process is always hard, because it's expensive to make it into an application and hopefully we can do that and connect it up to the application I am now having, because I've seen other prototypes that haven't yet been done something into and I think that's really sad because there's so much work behind them.

Henk: There's so much work put into it and they could add so much value...

Phoebe: Yeah, definitely. Do you think that anything is being left out of current conversations on digitalisation that you think are really actually quite important to discuss?

Elin: I think I already said it, you know, sustainability. It's going to take on a different level, like on the government level. Think about our phones, how we just buy new phones and they can't become usable, think battery become bad and it's the same thing we have with the exhibition when we are gonna change it. I wish the technology can be used over a long period of time.

Henk: And it would be better for the environment as well if you could do that.

Phoebe: Yeah, definitely. What about yourself, Henk? Do you think anything is being left out of our current conversations about digitalisation ?

Henk: One of my things, but it's not specific to digitalisation is that, I guess, we don't learn enough from the past and especially in environmental and climate change issues. Our ancestors all over the world

have learned a lot from handling their circumstances and we could be inspired by their solutions to different circumstances. I hope digitalisation will help us to better understand our past and to also use the lessons we have learned as humans all over history, prehistory.

Phoebe: This might be quite a big question to ask as my last question before wrapping up is, as we've said many times throughout this recording, digital tools are progressing very quickly. What do you think the future of digitalisation in archaeology or museum or cultural heritage looks like at the moment? Can we predict this?

Elin: Well, I see an amazing future. Because I think there will be a different way to documenting. In archaeology, if you can digitalise the whole different layers with your excavation it's so much easier now for people to analyse after the archaeological digging is finished. I think also that in the museum world, I like the idea of making more dissemination to be active, game-like, more for youth. Teenagers don't like to go to the museum because it's so passive way to get information, like the school way. I'm hoping that a different aspect of dissemination maybe trigger them to come to the museum and especially if you can give a specific task designed for their age in an application, for example, it would be a more fun way to learn.

Phoebe: Yeah, I know, I'm in my mid 20s so I'm not a teen by any means, but I do love when a museum is interactive. I find it so much more engaging.

Henk: I totally agree. I also think that the developments will be more like connecting objects in one museum to those in another or to the site where they were dug up. This could come together in a game-like environment which you could visit perhaps at your home. If the site, for instance, is not accessible or the objects are not accessible, that would be a great help. Or you could go to a museum and have a real, well, interactive virtual environment where you can walk around and do things and manipulate things. These are great developments and I think we're heading that way.

Phoebe: Yeah, I look forward to it then. So to wrap up, thank you both for such an interesting discussion. It's been a real pleasure to listen in on. As my very last question: what are your plans for the future and how can the EXARC community help to make a difference in regards to everything that we spoke about today?

Henk: My plans for the future are effectively creating these digital objects, landscapes, even monuments, to create more context and tell a story and making the past come to life a bit more. And I think that EXARC, with experimental archaeology and also with their activities in open-air museums, are making great steps in that direction as well. I hope we can do something together in the future.

Phoebe: That sounds really good.

Elin: When I'm thinking about my future, it will be after the PhD, of course. I actually want to make Museum Nord more socially relevant. Where dissemination is continuously updated on research results and that doesn't depend on the technology in the museum. We have other ways to update it. I also think that, you know, work more digitally, like we are prepared if there is another pandemic, for example, but also have a wider collaboration with the universities. EXARC is actually quite good at sharing information between the museum and the network. So I'm quite happy about that. It's important that we share our ideas and we can get inspired by each other and learn something.

Phoebe: That's a really nice way to end. So thank you so much, Elin and Henk, for joining us today and sharing your experience and expertise. I know that I certainly learned a lot and I'm sure that our listeners did and will too. If you'd like to hear more from both of our speakers, they will both be presenting their research at our **Digitalisation in Open-air Museums and Reconstructions conference (https://exarc.net/meetings/digitalisation/registration)** at the Museum Batavialand in

September. Registration has just opened on the EXARC website and we'd absolutely love to see you there. Thank you to everyone else for listening in to this episode of #FinallyFriday by EXARC. If you'd like to become more involved with EXARC, why not become a member? Alternatively, you can make a small PayPal donation through the website to help support EXARC in its endeavours.

Join us next month for another episode of #FinallyFriday and learn more all about the world of experimental archaeology, ancient technology, archaeological open-air museums and interpretation. Don't forget to follow the show through exarc.net and our associated social media channels. See you soon!