FAUL | 2018/2019 | MGG | 1º semestre

Teacher: Luís Mateus

Week 3 18/Out – F & G 19/Out – E & PL	• Vaults. Types of vaults. Stereotomy of vaults. • Geometric modelling of circular stairs (exercise 3). The following series of 10 videos about vaults, from Professor Pedro Januário, explain the genesis of 29 types of vaults. https://www.youtube.com/watch?v=13SrphYye7E (abóbada de canhão, abóbada de cisterna, abóbada de ogiva, abóbada rebaixada) (barrel vault, cistern vault, pointed barrel vault, segmental barrel vault) https://www.youtube.com/watch?v=DiOKj0m0Kaw (luneta cilindrica, luneta esférica, luneta cónica) (cylindrical under-pitch vault, spherical under-pitch vault, conical under-pitch vault) https://www.youtube.com/watch?v=cYaqADDBYkw (abóbada toral, abóbada helicoidal, abóbada São Gil) (annular vault, helical vault, St. Gil vault) https://www.youtube.com/watch?v=pZbOunx4FE0 (abóbada esférica, abóbada de forno, abóbada de vela, abóbada de vela alongada, abóbada da boémia) (spherical dome, semi spherical vault, guastavino vault, stretch guastavino, catalan vault) https://www.youtube.com/watch?v=tIquQt34vSc (abóbada alveolada, abóbada de bolbo alveolada) (alveolus vault, onion vault) https://www.youtube.com/watch?v=tgK45kLRIxw (abóbada elíptica de eixo vertical, abóbada elíptica de eixo horizontal, abóbada de conóide) (vertical axis elliptical vault, horizontal axis elliptical vault, conoid dome) https://www.youtube.com/watch?v=u8gXpujXPTU (abóbada entrelaçada ímpar octogonal, abóbada entrelaçada par decagonal, abóbada bizantina) (octagonal vault (odd), decagonal vault (even), ottoman dome) https://www.youtube.com/watch?v=8kvj_rR96eQ (abóbada de aresta, abóbada de cruzeiro, abóbada oitavada, (groined vault, ribbed vault, octagonal ribbed vault, https://www.youtube.com/watch?v=_J2nCNa0Vag (abóbada de palma, abóbada sexpartida) (fan vault, sexpartite vault) https://www.youtube.com/watch?v=thfXJKPkvHM (abóbada octopartida) (octopartite vault)

	• Exercise 5 (weight: 8) From the 3 under-pitch vaults, model the overall shape of all and choose one to model stone by stone (see the example in http://home.fa.ulisboa.pt/~lmmateus/turmas_aulas_1516_1sem.html). In the model you should consider a thickness of 30cm. The diameter of the big circular arch should be, in meters, the sum of the digits of you student's number divided 2 (if the result is bigger than 10, divide it again by 2). All the joints between ashlars should be either planar, or conical. - Do a report, in PDF, illustrating and describing the modelling process and the results obtained. - The delivery of the exercise (file *.3dm + *.pdf in a zipped folder named XXXXXXX_5.zip where XXXXXXX corresponds to your student number) should be done via Wetransfer or by email: >> until the 24h of 11/11/2018

(the following image was retrieved from the book "Dicionário Visual de Arquitetura" coordinated by Lorenzo de la Plaza Escudero).